

REMARKS

Status of the Claims

In the Office action dated April 1, 2009, claims 1-35 stand rejected. Claims 29, 31, and 35 stand rejected under 35 U.S.C. § 112, second paragraph and under 35 U.S.C. § 101 as improper use claims. Claims 1-2, 4, 10-14, 16-22, 24, 28-31 stand rejected under 35 U.S.C. §102(b), and claims 2-9, 13, 14, 15, 22-27, 32-34 stand rejected under 35 U.S.C. § 103(a).

Applicant hereby cancels claims 2, 11, 23, 31, and 35, and amends claims 1, 10, 12, 13, 14, 15, 16, 29, and 32 in compliance with 37 C.F.R. §1.121(c). Support for the amendments to the claims is located throughout the specification and originally-filed claims, for example, in originally-filed and currently cancelled claims 2, 11, and 23 and on pages 6-8 and 11 of the originally-filed English Translation. No new matter has been introduced. In view of the amendments and the following remarks, Applicant respectfully submits that claims 1, 3-10, 12-22, 24-30, 32-34 are in condition for allowance.

Response to 35 U.S.C. § 101 and 112 Rejections of claims 29, 31, and 35

Claims 29, 31, and 35 were each rejected under 35 U.S.C. § 101 and 35 U.S.C. § 112, second paragraph, as improper use claims. Specifically, on page 2 of the Office action, the Examiner stated that “Claims 29, 31, and 35 provide for the use of a composition and a metal sheet, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass.” In addition, the Examiner noted that claims 31 and 35 were rejected “because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process.”

In the present Amendment, Applicant has cancelled claims 31 and 35 rendering the rejection against these two claims moot. Applicant has amended claim 29 to eliminate the phrase “use is made” from the claim and to recite that the “lubricant is selected from the group consisting of.” Applicant respectfully submits that this amendment addresses the Examiner’s

concerns, as the claim 29 no longer recites a use. Accordingly, Applicant requests reconsideration and the removal of the 35 U.S.C. § 101 and 35 U.S.C. § 112 rejections.

Response to 35 U.S.C. § 102 Rejection of Claims 1-2, 4, 10-14, 16-22, 24, 28-31

Applicant's amended independent claim 1, from which claims 3-10, 12-22, 24-30, and 32-34 depend, is directed to a metal sheet including a lubricant coating, which comprises a first layer formed on the metallic surface by the application of a solution containing an organic phosphoric acid ester and a second layer including a lubricant. As a result, the invention provides a layer including the phosphoric acid ester which adheres the lubricant (second layer) to the metal sheet, while providing a barrier to a reaction between the lubricant in the second layer and the metal sheet. The invention recited in claim 1 provides improved forming properties, such as, for example, an improvement in the coefficient of friction over samples that do not include the two layer approach (See for example, Examples 1-4 on pages 13 and 14 of the present application). Another advantage of providing Applicant's claimed first and second layers is that the metallic surface is not directly coated with a lubricating oil. That is, the first layer which includes the phosphoric acid ester is applied to the metallic surface to protect the metallic surface from undesirable contact with oil molecules contained in the second layer, and thereby allowing the second layer to be easily removed at a later date without leaving any residue. (See, pages 4, 15, and 16 of the originally-filed application.)

Claims 1-2, 11, 18-21, 29 and 31 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 3,734,784 to Bereday ("Bereday"). Applicant respectfully disagrees.

Applicant respectfully submits that Bereday does not anticipate claim 1, as amended, because Bereday does not teach every element of claim 1. In particular, Bereday does not teach Applicant's claimed "first layer and second layer, the first layer being formed by the application onto the metallic surface of the metal sheet or metal sheet section of a solution containing an organic phosphoric acid ester," "the second layer including a lubricant and being arranged on the first layer."

The Examiner has alleged that Bereday teaches in column 18, lines 62-64 that further layers can be placed on Bereday's organic layer, and that in column 19, line 73 through column 20, line 5 Bereday discloses that the further layer can be a lubricant layer. While Bereday's disclosure provides for additional layers to be applied on top of the an organic film chemically bonded to an aluminum surface, Bereday, contrary to the Examiner's allegation, fails to teach or suggest a first layer formed by the application onto the metallic surface of a solution containing an organic phosphoric acid ester and a *second layer including a lubricant arranged on the first layer*. Rather, Bereday discloses that the layer applied to the metallic surface can be a lubricating film. Specifically, Bereday states "the invention provides an improved aluminum surface having chemically bonded to it an organic film comprising at its bonding interface a reaction product of an organic compound and an active hydrated amorphous layer of aluminum oxide integral with the aluminum." (See, column 4, lines 69-74). Bereday goes on to state in column 19, line 73 to column 20, line 5, that "[a]nother use of the invention is in providing strongly adhering lubricating films on aluminum for use in mechanically working aluminum into desired shapes...[t]he desired organic film can be applied to the aluminum substrate in the manner described in the foregoing examples." The passage contained in column 19, lines 73 to column 20, line 5 (which was also cited by the Examiner) clearly shows that Bereday teaches that the layer applied to the aluminum surface (i.e., a first layer) can be a lubricant or a lubricating film, however, contrary to the Examiner's allegation, Bereday does not teach or suggest that a second or a subsequent layer includes a lubricant. Further evidence that Bereday fails to teach that a second layer includes a lubricant can be found at column 20, lines 6-24, in which Bereday states the following:

Summarizing the foregoing, the invention provides a method whereby a homogenous organic film is chemically bonded via a reaction product to aluminum surfaces. This film, the properties of which will depend on the organic compound employed, may act as a protective coating, for example, a plastic coating, in resisting corrosion, or may be employed as a foundation film in subsequent processing steps. Thus, the foundation film may be employed as an intermediate layer in laminating plastics to aluminum substrates, or providing a base for the application of paints, enamels, epoxy resins, and the like coatings. For

example, because of the nature of the original bond, built-up coatings with or without pigments can be produced to provide markedly improved resistance to corrosion, markedly improved electric properties (e.g., dielectric properties), resistance to abrasion, etc. Preferably, the foundation film should be one capable of being polymerized. For example, the film may be derived from unsaturated[d] hydrocarbons, such as unsaturated compounds of the alkyl group.

This passage makes no reference to lubricating films being provided as a layer arranged on the first layer or a foundation layer formed on the aluminum surface. Therefore, this passage further illustrates that the lubricating film of Bereday must be the organic film bonded via a reaction product to the surface of the aluminum and is not a film located in a second layer separated from the metallic surface of the metal sheet. Accordingly, Applicant submits that Bereday fails to teach or suggest Applicant's claimed "second layer including a lubricant and being arranged on the first layer." As Bereday fails to teach each and every element recited in Applicant's independent claim, Applicant respectfully submits that Bereday fails to anticipate claim 1 and claims depending therefrom. Reconsideration and the withdrawal of this rejection is respectfully requested.

Claims 1-2, 18-19, 21, 29 and 31 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 5,064,500 to Awad ("Awad"). Applicant respectfully disagrees.

Applicant respectfully submits that Awad does not anticipate claim 1, as amended, because Awad does not teach every element of claim 1. In particular, Awad does not teach Applicant's claimed "first layer and second layer, the first layer being formed by the application onto the metallic surface of the metal sheet or metal sheet section of a solution containing an organic phosphoric acid ester," "the second layer including a lubricant and being arranged on the first layer." Rather, Awad discloses a method in which a water based acid or alkaline cleaner is used to treat aluminum surfaces, such as aluminum cans. Specifically, Awad states in column 2, lines 4-14:

It has now been found that a formed aluminum surface, which has been conventionally thoroughly cleaned and degreased by

sufficient contact with a water based acid or alkaline cleaner, can be effectively and advantageously surface conditioned so as to impart increased mobility, i.e., a lower coefficient of static surface friction, to the surface when subsequently dried, without harming the reflectivity or printability of, or the adherence of lacquer to, the treated surfaces, by contacting the surface with a composition.

Nowhere within Awad is it taught that a second layer, especially a second layer including a lubricant is to be arranged on the first layer. As Awad fails to teach each and every element of Applicant's amended claim 1, Applicant requests reconsideration and the withdrawal of the 35 U.S.C. § 102(b) rejection of claims 1-2, 18-19, 21, 29 and 31 based on Awad.

Claims 1-2, 4, 10-14, 16, 18-19, 22, 24, 28-30, and 35 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by International Patent Publication No. WO 01/59045 to Prince ("Prince"). Applicant respectfully disagrees.

Applicant respectfully submits that Price does not anticipate claim 1, as amended, because Prince does not teach every element of claim 1. In particular, Prince does not teach Applicant's claimed "first layer and second layer, the first layer being formed by the application onto the metallic surface of the metal sheet or metal sheet section of a solution containing an organic phosphoric acid ester," "the second layer including a lubricant and being arranged on the first layer." Rather, Prince discloses a water-soluble hot rolling composition for aluminum and aluminum alloys. See for example pages 1 and 2 of Prince. Table 1 of Prince describes that the composition may include a trioctylphosphate ester. Prince states on page 12, that "an improvement of 6.0% on average is achieved with the emulsion of the invention over the emulsion of the prior art. Prince further states on pages 12 and 13.

The plate-out properties of both emulsions were also determined. The oil plate-out property of an emulsion is herein defined as the property of the film to separate out from an emulsion onto the aluminum surface. The greater the formation of a film oil on the aluminum surface, the higher the lubricity and the better the roll coating.

The plate-out property is determined as follows. A preheated aluminum sheet is submerged in an emulsion for a given time and then positioned at 40° angle. After drying in an oven, the

amount of deposited oil is calculated from the weight difference of the aluminum sheet.

A value of 650 mg/m² was found for the prior art emulsion whereas a value of 1150 mg/m² was found for the emulsion of the invention. Therefore, the higher value obtained for the plate-out property of the emulsion of the invention reflects its better lubricity over the prior art emulsion.

The above passages clearly illustrate that Prince does not contemplate a first layer and second layer as claimed by Applicant, but rather that Prince merely discloses a lubricant on the aluminum/metallic surface. Applicant respectfully submits that nowhere within Prince is there a teaching or a suggestion that a second layer including a lubricant should be arranged on a first layer formed by the application onto the metallic surface of a solution containing an organic phosphoric acid ester. As a result, Applicant respectfully submits that Prince fails to anticipate Applicant's amended claim 1 and any claim depending therefrom. Reconsideration and withdrawal of this rejection is respectfully requested.

Claims 1 and 17-19 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 5,650,097 to Wysong ("Wysong"). Applicant respectfully disagrees.

Wysong discloses a composition consisting essentially of (a) a surfactant and (b) at least one neutralized alkyl phosphate in a surfactant. (See, abstract of Wyson). Wyson, like Bereday, Awad and Prince, fails to teach or even suggest including *a second layer including a lubricant*, arranged on the first layer, the first layer formed by the application onto the metallic surface of a metal sheet or metal sheet section of a solution containing an organic phosphoric acid ester. As Wysong fails to teach each and every element of Applicant's amended independent claim 1, Wysong fails to anticipate Applicant's claims. Accordingly, Applicant requests reconsideration and the withdrawal of this rejection.

Response to 35 U.S.C. § 103 Rejection of Claims 2-9, 13, 14, 15, 22-27, 32-34

Claims 2 and 3 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable in view of the Wysong; claims 13 and 22 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable in view of Awad; claims 4-6, 14, 24 and 25 were rejected under 35 U.S.C. § 103(a)

as allegedly unpatentable in view of the combination of Bereday and U.S. Patent No. 4,313,836 to Nassry (“Nassry”); claims 4, 7, 9, 15, 24-27 and 32-33 were rejected under 35 U.S.C. § 103(a) as allegedly unpatentable in view of the combination of Bereday and U.S. Patent No. 4,846,898 to Natalie (“Natalie”); claims 4, 7, 9, 15, 24-27, 32-34 were rejected under 35 U.S.C. § 103(a) as allegedly unpatentable in view of the combination of Awad and Natalie; and claims 8-9, 23, and 26 were rejected under 35 U.S.C. § 103(a) as allegedly unpatentable in view of the combination of Bereday and U.S. Patent No. 4,878,963 to Bibber (Bibber). Applicant respectfully disagrees.

As discussed above, none of Bereday, Awad, Prince and Wysong teach or suggest providing a first layer on a metallic surface formed from the application of a solution including a phosphoric acid ester and a second layer including a lubricant arranged on the second layer. As each of Awad and Wysong fail to teach this element of claim 1, Applicant respectfully submits that the 35 U.S.C. 103 (a) rejection of claims 2 and 3 as unpatentable in view of Wysong and the rejection of claims 13 and 22 as unpatentable in view of the Awad should be reconsidered and withdrawn as all of the elements of claim 1 are not taught or suggested in these references.

With respect to the rejections under 35 U.S.C. § 103(a) based on the combination of Bereday and Nassry, Bereday and Natalie, Awad and Natalie, and Bereday and Bibber, Applicant respectfully submits that none of Nassry, Natalie, and Bibber cure the deficiencies of Bereday and Awad discussed above. That is, the Examiner cites Nassry for providing disclosure of a sulfur compound (not for teaching first and second layers and not against Applicant’s original claim 11); the Examiner cites Natalie for teaching a molybdenum compound (not for teaching first and second layers and not against Applicant’s original claim 11); the Examiner cites Bibber for disclosing a phosphate solution having a pH of 7 to 12.5. As none of these references were cited to provide a teaching or a suggestion to modify Bereday or Awad to provide a first and second layer as claimed by the Applicant, Applicant respectfully submits that none of the cited combinations (i.e., Bereday and Nassry, Bereday and Natalie, Awad and Natalie, and Bereday and Bibber) teach each and every element of Applicant’s amended claim 1. As a result, Applicant requests reconsideration and the withdrawal of all 35 U.S.C. § 103(a) rejections provided in the Office action.

Conclusion

Applicant respectfully submits that all of the pending claims are in condition for allowance and request early favorable action. If the Examiner believes a telephonic interview would expedite the prosecution of the present application, the Examiner is welcome to contact Applicant's Attorney at the number below

Respectfully submitted,

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